

20. In this space make a statement of about 300 words concerning your plans for graduate study and a professional career. Be as specific as you can regarding your vocational interest and the course of training you expect to follow in achieving your goal. If you are interested in other fields closely related to that of your first choice, please indicate them.

Since 1950, I have been studying the process of biochemical mutation in Ustilago hoping to elucidate the genetic mechanism of microbial variation in relation to the biochemical change of heritable unit.

I have been interested in the outcome of the genetic studies on bacteria carried out in your Department, because it involves such interesting phenomenon as transduction, which seems to indicate a specific and direct relation between transmissible agent and genetic change. If I am admitted to the graduate school of your university, I would like to study first the fundamental techniques on bacterial genetics, such as mutant screening, recombination analysis and single-cell handling, which are essential for further special research works in the same field. Then I would proceed to the relation between the transducing unit to the other heritable unit (such as unit of sexual recombination, mutation, and transforming agent), from the genetic and biochemical view-points. Thus I intend to solve the following questions:

1. Is the transducing agent nothing but a liberated bacterial gene itself?; or is it a part of the gene?; or does it modify in the function of the gene?; or does it induce any directed mutation acting upon the gene?

2. Whether the transducing agent and the transforming agent give the same genetic effect but they show any distinction in the mode of transmission, or they differ in both the genetic effect and the mode of the transmission.

3. Whether it is possible to change the other in vitro, by treating the suspension of liberated agents by some artificial means, or not.

I am hoping to continue and develop these researches during and after my graduate school life, and to arrive at a more inclusive view on the genetic mechanism of microbial variations in relation to their biochemical nature.